

WHAT IS CLAIMED IS:

5 1. A wrapping element useful in absorbent articles comprising fluid-impervious plastic material in the form of a resilient three-dimensional web exhibiting a fiber-like appearance and tactile impression, the fluid-impervious plastic material comprises a laminate having at least three layers:

10 a) a first layer, forming a first outer surface of the laminate, comprising a blend of at least two thermoplastic polymeric components, a continuous phase of a first thermoplastic polymeric component that exhibits a first melting point temperature and a dispersed phase of an immiscible, second thermoplastic polymeric component that exhibits a second melting point temperature, less than the first melting point temperature, such that when the web is heated to a temperature between the first melting point temperature and the second melting point temperature, the second thermoplastic polymeric component is capable of forming an adhesive bond;

20 b) a second layer forming a second outer surface of the laminate, opposite the first outer surface; and

25 c) at least one intermediate layer, disposed between the first and second layers, wherein the web has first and second surfaces, the first surface being defined at least in part by the either of

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the first and second layers and having a multiplicity of apertures therein, each of the apertures being defined by a multiplicity of intersecting fiber-like elements interconnected to one another substantially in the plane of the first surface, each of the fiber-like elements exhibiting a cross-section comprising a base portion in the plane of the first surface and a sidewall portion joined to each edge of the base portion, the sidewall portions extending generally in the direction of the second surface of the web, the intersecting sidewall portions being interconnected to one another intermediate the first and the second surfaces of the web, the interconnected sidewall portions terminating substantially concurrently with one another in the plane of the second surface.

2. The wrapping element of claim 1 wherein the first thermoplastic polymeric component is selected from the group consisting of polyolefins, polyesters, polyamides, polyurethanes, polystyrenes, halogenated polymers, and copolymers thereof.

3. The wrapping element of claim 2 wherein the first thermoplastic polymeric component comprises a polyolefin.

4. The wrapping element of claim 1 wherein the second thermoplastic polymeric component is selected

from the group consisting of polyolefins, polyesters, polyamides, polyurethanes, polystyrenes, halogenated polymers, and copolymers thereof.

5 5. The wrapping element of claim 4 wherein the second thermoplastic polymeric component comprises a polyolefin.

10 6. The wrapping element of claim 1 wherein the difference between the first melting point temperature and the second melting point temperature is greater than about 20° C.

15 7. The wrapping element of claim 1 wherein the first layer comprises about 45 to about 95 wt-% of the thermoplastic polymeric component and about 55 to about 5 wt-% of the second thermoplastic polymeric component.

20 8. The wrapping element of claim 7 wherein the first layer comprises about 60 to about 80 wt-% of the thermoplastic polymeric component and about 40 to about 20 wt-% of the second thermoplastic polymeric component.

25 9. The wrapping element of claim 1 wherein the first layer further comprises one or more components selected from the group comprising antioxidants, UV absorbers, lubricants, antiblock agents, slip agents,

plasticizers, nucleating agents, antistatic agents,
flame retardants, pigments, dyes, and fillers.

10. The wrapping element of claim 1 wherein the
second layer comprises a component selected from the
group consisting of polyolefins, polyesters, polyamides,
polyurethanes, polystyrenes, halogenated polymers, and
copolymers thereof.

11. The wrapping element of claim 1 wherein the
second layer comprises a blend of at least two
thermoplastic polymeric components, a continuous phase
of a first thermoplastic polymeric component that
exhibits a first melting point temperature and a
dispersed phase of an immiscible, second thermoplastic
polymeric component that exhibits a second melting point
temperature, less than the first melting point
temperature, such that when the web is heated to a
temperature between the first melting point temperature
and the second melting point temperature, the second
thermoplastic polymeric component is capable of forming
an adhesive bond/.

12. The wrapping element of claim 11 wherein the
first thermoplastic polymeric component of the second
layer is selected from the group consisting of
polyolefins, polyesters, polyamides, polyurethanes,



polystyrenes, halogenated polymers, and copolymers thereof.

5 13. The wrapping element of claim 12 wherein the first thermoplastic polymeric of the second layer component comprises a polyolefin.

10 14. The wrapping element of claim 11 wherein the second thermoplastic polymeric component of the second layer is selected from the group consisting of polyolefins, polyesters, polyamides, polyurethanes, polystyrenes, halogenated polymers, and copolymers thereof.

15 15. The wrapping element of claim 14 wherein the second thermoplastic polymeric component of the second layer comprises a polyolefin.

20 16. The wrapping element of claim 11 wherein the difference between the first melting point temperature and the second melting point temperature of the components of the second layer is greater than about 20° C.

25  17. The wrapping element of claim 11 wherein the second layer comprises about 45 to about 95 wt-% of the thermoplastic polymeric component and about 55 to about 5 wt-% of the second thermoplastic polymeric component. 

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18. The wrapping element of claim 17 wherein the second layer comprises about 60 to about 80 wt-% of the thermoplastic polymeric component and about 40 to about 20 wt-% of the second thermoplastic polymeric component.

19. The wrapping element of claim 11 wherein the first and second layers are substantially identical.

20. The wrapping element of claim 1 wherein the intermediate layer comprises a component selected from the group consisting of polyolefins, polyesters, polyamides, polyurethanes, polystyrenes, halogenated polymers, and copolymers thereof.

21. The wrapping element of claim 20 wherein the intermediate layer comprises a polyolefin or a polyolefin copolymer.

22. The wrapping element of claim 21 wherein the intermediate layer comprises a blend of polyethylene and ethylene-vinyl acetate copolymer.

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23. The wrapping element of claim 1 wherein the intermediate layer further comprises one or more components selected from the group comprising antioxidants, UV absorbers, lubricants, antiblock agents, slip agents, plasticizers, nucleating agents,

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antistatic agents, flame retardants, pigments, dyes, and fillers.

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24. The wrapping element of claim 23 wherein the intermediate layer comprises greater than about 5 wt-% of a pigment.

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25. The wrapping element of claim 1 wherein the intermediate layer comprises a blend of polymeric materials.

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26. The wrapping element of claim 25 wherein the intermediate layer comprises a blend of about 45 to about 99 wt-% of a first polymeric component and about 1 to about 55 wt-% of a second polymeric component.

27. The wrapping element of claim 1 which further comprises an additional intermediate layer.

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28. The wrapping element of claim 1 wherein the first surface of the web is defined, at least in part, by the first layer of the laminate.

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29. A tampon comprising an absorbent structure substantially enclosed by a cover wherein (1) the cover comprises fluid-impervious plastic material in the form of a resilient three-dimensional web exhibiting a fiber-like appearance and tactile impression, (2) the fluid-

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impervious plastic material comprises a laminate having at least three layers:

5 a first layer, forming a first outer surface of the laminate, comprising a blend of at least two thermoplastic polymeric components, a continuous phase of a first thermoplastic polymeric component that exhibits a first melting point temperature and a dispersed phase of an immiscible, second thermoplastic polymeric component that exhibits a second melting point temperature, less than the first melting point temperature, such that when the web is heated to a temperature between the first melting point temperature and the second melting point temperature, the second thermoplastic polymeric component is capable of forming an adhesive bond;

10 a second layer forming a second outer surface of the laminate, opposite the first outer surface; and at least one intermediate layer, disposed between the first and second layers; and

20 (3) the web has first and second surfaces, the first surface being defined at least in part by the first layer and having a multiplicity of apertures therein, each of the apertures being defined by a multiplicity of intersecting fiber-like elements interconnected to one another substantially in the plane of the first surface, each of the fiber-like elements exhibiting a cross-section comprising a base portion in the plane of the

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first surface and a sidewall portion joined to each edge of the base portion, the sidewall portions extending generally in the direction of the second surface of the web, the intersecting sidewall portions being interconnected to one another intermediate the first and the second surfaces of the web, the interconnected sidewall portions terminating substantially concurrently with one another in the plane of the second surface.

2 30. The tampon of claim ~~29~~¹ wherein the first thermoplastic polymeric component is selected from the group consisting of polyolefins, polyesters, polyamides, polyurethanes, polystyrenes, halogenated polymers, and copolymers thereof.

3 31. The tampon of claim ~~30~~² wherein the first thermoplastic polymeric component comprises a polyolefin.

4 32. The tampon of claim ~~31~~³ wherein the second thermoplastic polymeric component is selected from the group consisting of polyolefins, polyesters, polyamides, polyurethanes, polystyrenes, halogenated polymers, and copolymers thereof.

5 33. The tampon of claim ~~32~~⁴ wherein the second thermoplastic polymeric component comprises a polyolefin.

6 34. The tampon of claim ~~29~~¹ wherein the difference between the first melting point temperature and the second melting point temperature is greater than about 20° C.

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35. The tampon of claim 29 wherein the first layer comprises about 45 to about 95 wt-% of the thermoplastic polymeric component and about 55 to about 5 wt-% of the second thermoplastic polymeric component.

8 36. The tampon of claim ~~29~~¹ wherein the second layer comprises a blend of at least two thermoplastic polymeric components, a continuous phase of a first thermoplastic polymeric component that exhibits a first melting point temperature and a dispersed phase of an immiscible, second thermoplastic polymeric component that exhibits a second melting point temperature, less than the first melting point temperature, such that when the web is heated to a temperature between the first melting point temperature and the second melting point temperature, the second thermoplastic polymeric component is capable of forming an adhesive bond/.

9 37. The tampon of claim 36 wherein the first thermoplastic polymeric component of the second layer is selected from the group consisting of polyolefins,

polyesters, polyamides, polyurethanes, polystyrenes, halogenated polymers, and copolymers thereof.

10 ^{3/8}. The tampon of claim ⁹ 37 wherein the first thermoplastic polymeric of the second layer component comprises a polyolefin.

11 ⁸ 36. The tampon of claim ⁸ 36 wherein the second thermoplastic polymeric component of the second layer is selected from the group consisting of polyolefins, polyesters, polyamides, polyurethanes, polystyrenes, halogenated polymers, and copolymers thereof.

12 ¹¹ 39. The tampon of claim ¹¹ 39 wherein the second thermoplastic polymeric component of the second layer comprises a polyolefin.

13 ⁸ 41. The tampon of claim ⁸ 36 wherein the difference between the first melting point temperature and the second melting point temperature of the components of the second layer is greater than about 20° C.

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A12 42. The tampon of claim 36 wherein the second layer comprises about 45 to about 95 wt-% of the thermoplastic polymeric component and about 55 to about 5 wt-% of the second thermoplastic polymeric component.

15 ⁴³~~43~~. The tampon of claim ⁸~~36~~ wherein the first and second layers are substantially identical.

5 16 ⁴⁴~~44~~. The tampon of claim ¹~~29~~ wherein the intermediate layer comprises a component selected from the group consisting of polyolefins, polyesters, polyamides, polyurethanes, polystyrenes, halogenated polymers, and copolymers thereof.

10 17 ⁴⁵~~45~~. The tampon of claim ¹⁶~~44~~ wherein the intermediate layer comprises a polyolefin or a polyolefin copolymer.

15 18 ⁴⁶~~46~~. The tampon of claim ¹⁷~~45~~ wherein the intermediate layer comprises a blend of polyethylene and ethylene-vinyl acetate copolymer.

20 sub A13 47. The tampon of claim 29 wherein the intermediate layer further comprises one or more components selected from the group comprising antioxidants, UV absorbers, lubricants, antiblock agents, slip agents, plasticizers, nucleating agents, antistatic agents, flame retardants, pigments, dyes, and fillers.

25 20 ⁴⁸~~48~~. The tampon of claim ¹⁹~~47~~ wherein the intermediate layer comprises greater than about 5 wt-% of a pigment.

2148. The tampon of claim ~~29~~²¹ wherein the intermediate layer comprises a blend of polymeric materials.

2250. The tampon of claim ~~49~~²¹ wherein the intermediate layer comprises a blend of about 45 to about 99 wt-% of a first polymeric component and about 1 to about 55 wt-% of a second polymeric component.

2351. The tampon of claim ~~29~~¹ which further comprises an additional intermediate layer.

52. A method of forming a wrapping element useful in absorbent articles, comprising the steps of:
forming a laminate having at least three layers having
a first layer, forming a first outer surface of the laminate, comprising a blend of at least two thermoplastic polymeric components, a continuous phase of a first thermoplastic polymeric component that exhibits a first melting point temperature and a dispersed phase of an immiscible, second thermoplastic polymeric component that exhibits a second melting point temperature, less than the first melting point temperature, such that when the web is heated to a temperature between the

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first melting point temperature and the second melting point temperature, the second thermoplastic polymeric component is capable of forming an adhesive bond;

a second layer forming a second outer surface of the laminate, opposite the first outer surface; and

at least one intermediate layer, disposed between the first and second layers;

applying fluid at a temperature greater than ambient temperature to the laminate while it is supported on a three-dimensional surface to form a resilient three-dimensional web exhibiting a fiber-like appearance and tactile impression, wherein the web has first and second surfaces, the first surface being defined at least in part by the either of the first and second layers and having a multiplicity of apertures therein, each of the apertures being defined by a multiplicity of intersecting fiber-like elements interconnected to one another substantially in the plane of the first surface, each of the fiber-like elements exhibiting a cross-section comprising a base portion in the plane of the first surface and a sidewall portion joined to each edge of the base portion, the sidewall portions extending generally in the direction of the second surface of the web, the intersecting sidewall portions being interconnected

A14

to one another intermediate the first and the second surfaces of the web, the interconnected sidewall portions terminating substantially concurrently with one another in the plane of the second surface.-dimensional web exhibiting a fiber-like appearance and tactile impression; and separating the web into individual pieces of material of a size appropriate for a wrapping element.

53. The method of claim 52 wherein the step of forming the laminate comprises extruding thermoplastic polymeric components through an extruder.

54. The method of claim 53 wherein the first and second layers are extruded together to envelope the intermediate layer.

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55. A method of making a tampon comprising the steps of:

separating a cover from a supply of a resilient three-dimensional web exhibiting a fiber-like appearance and tactile impression,

the web comprising fluid-impervious plastic material which comprises a laminate having at least three layers:

a first layer, forming a first outer surface of the laminate, comprising a

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blend of at least two thermoplastic
polymeric components, a continuous phase
of a first thermoplastic polymeric
component that exhibits a first melting
point temperature and a dispersed phase
of an immiscible, second thermoplastic
polymeric component that exhibits a
second melting point temperature, less
than the first melting point temperature,
such that when the web is heated to a
temperature between the first melting
point temperature and the second melting
point temperature, the second
thermoplastic polymeric component is
capable of forming an adhesive bond;
a second layer forming a second outer
surface of the laminate, opposite the
first outer surface, comprising a blend
of at least two thermoplastic polymeric
components, a continuous phase of a first
thermoplastic polymeric component that
exhibits a first melting point
temperature and a dispersed phase of an
immiscible, second thermoplastic
polymeric component that exhibits a
second melting point temperature, less
than the first melting point temperature,
such that when the web is heated to a

A15

temperature between the first melting point temperature and the second melting point temperature, the second thermoplastic polymeric component is capable of forming an adhesive bond; and at least one intermediate layer, disposed between the first and second layers; and the web has first and second surfaces, the first surface being defined at least in part by the first layer and having a multiplicity of apertures therein, each of the apertures being defined by a multiplicity of intersecting fiber-like elements interconnected to one another substantially in the plane of the first surface, each of the fiber-like elements exhibiting a cross-section comprising a base portion in the plane of the first surface and a sidewall portion joined to each edge of the base portion, the sidewall portions extending generally in the direction of the second surface of the web, the intersecting sidewall portions being interconnected to one another intermediate the first and the second surfaces of the web, the interconnected sidewall portions terminating substantially concurrently with one another in the plane of the second surface;

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substantially enclosing an absorbent structure with the cover; and
applying thermal energy to the cover to heat it to a temperature between the first melting point temperature and the second melting point temperature of the first layer to form an adhesive bond.

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